

CLAIMS:

215

1. A low-pressure gas discharge lamp which includes a discharge vessel (1) and at least two spatially separated capacitive coupling-in structures (2) and operates at an operating frequency f , characterized in that

5 each capacitive coupling-in structure (2) is formed by at least one dielectric having a thickness d and a dielectric constant ϵ , each dielectric being subject to the condition $d/(f \cdot \epsilon) < 10^{-8}$ cm.s.

10 2. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that at least one dielectric is subject to the condition $d/(f \cdot \epsilon) > 10^{-9}$ cm.s.

15 3. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the operating frequency f is in the range of from 150 Hz to 1 MHz.

20 4. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the dielectric constant of the dielectric has an essentially negative temperature dependency.

25 5. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) is shaped essentially as a hollow cylinder having an inside diameter d_i which is smaller than 10 mm.

6. A low-pressure gas discharge lamp as claimed in claim 5, characterized in that

the capacitive coupling-in structure (2) is shaped essentially as a hollow cylinder, has an inside diameter d_i and is connected to the discharge vessel (1) in a compression proof manner.

5 7. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) is filled with a filling gas containing at least one inert gas.

10 8. A low-pressure gas discharge lamp as claimed in claim 7, characterized in that the filling gas contains mercury.

15 9. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the operating frequency f is less than 150 kHz.

20 10. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge current of the gas discharge is more than 10 mA.

11. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the dielectric consists of a paraelectric, ferroelectric or anti-ferroelectric solid material.

25 12. A low-pressure gas discharge lamp as claimed in claim 1, characterized in that the discharge vessel (1) consists of an UV transparent material and is filled with a filling gas emitting UV.

30 13. A device for the backlighting of a liquid crystal display, including at least one low-pressure gas discharge lamp with a discharge vessel (1), at least two capacitive coupling-in structures (2), operating at an operating frequency f , as the light source (10), and an optical system (13, 14, 15) for producing backlighting, characterized in that

each capacitive coupling-in structure (2) consists of at least one dielectric having a thickness d and a dielectric constant ϵ , each dielectric being subject to the condition $d/(f \cdot \epsilon) < 10^{-8}$ cm.s.



PHDE000049
23.10.2000
14

BEST AVAILABLE COPY